LAND USE CONTROL IMPLEMENTATION PLAN

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
KENNEDY SPACE CENTER
BREVARD COUNTY, FLORIDA

FACILITY:	Spaceport USA Diesel Fuel Storage Area and Visitor Information Center/Tour Bus Service Building Oil/Water Separator Site Florida Department of Environmental Protection Facility #058622250
CONTAMINANTS:	Petroleum Hydrocarbons in Groundwater Polynuclear Aromatic Hydrocarbons (PAHs) in Soil
CONTROL:	Prohibit residential use and groundwater consumption and maintain the site so that the groundskeeper scenario remains applicable.

PURPOSE OF LAND USE CONTROL IMPLEMENTATION PLAN

This Land Use Control Implementation Plan (LUCIP) has been prepared to inform current and potential future users of the Diesel Fuel Storage Area and Visitor Information Center/Tour Bus Service Building Oil/Water Separator Site at Spaceport USA of institutional controls that have been implemented at the site[1]. Although there are no current unacceptable risks to human health or the environment associated with the Spaceport USA site, certain land use controls (LUCs) are necessary to prevent the potential for future risks. Controls will include periodic inspection, condition certification and agency notification.

WHY LAND USE CONTROLS ARE NEEDED

Preliminary human health and ecological risk evaluations were completed as part of a Resource Conservation and Recovery Act (RCRA) Confirmation Sampling Report (CS). Chemicals of concern for human health risk were identified during the CS and during other sampling activities, including a Contamination Assessment and RFI confirmation sampling. Chemicals of concern with concentrations exceeding Florida Department of Environmental Protection (FDEP) and Environmental Protection Agency (EPA) cleanup target levels include petroleum hydrocarbons (TPH) in groundwater in one area and polynuclear aromatic hydrocarbons (PAHs) in surficial soils in a second area.

SITE DESCRIPTION

Spaceport USA is the Kennedy Space Center (KSC) visitors center, operated for NASA by an independent concessioner. It features a wide variety of exhibits and activities related to the space program, including guided bus tours. Two areas

1. This LUCIP summarizes institutional controls regarding the NASA KSC Spaceport USA Diesel Fuel Storage Area and Visitor Information Center Tour Bus Service Building/ Oil/Water Separator Site. For detailed information on the site, consult the Spaceport USA administrative file, which is available for review by contacting the KSC Environmental Program Office at telephone number (321) 867-8411.

within support facilities to the southwest of the Spaceport USA main building have been the subject of environmental investigations: the Diesel Fuel Storage Area (DFSA) and Tour Bus Service (TBS) Building Oil/Water Separator (OWS) Site.

SITE LOCATION

Spaceport USA is located on NASA property, on the NASA Parkway West between the KSC Industrial Area and U.S. 1. The Spaceport USA DFSA and Visitor Information Center (VIC)/TBS Building are located in support facilities in the southwest area of Spaceport USA (Figure 1).

The site is located within Section 1 of Township 23 South, Range 36 East. The areas of the Spaceport site covered by this LUCIP are situated in the southwestern quadrant of the site (Figures 1 and 2). The soil use control area is immediately adjacent to the corner of, and north of, the drainage canal southwest of the TBS Building, and the groundwater use control area lies 200 feet to the west (Figure 2). Coordinates of the corners of the LUCs are provided in Figure 2 in the State Plane Coordinate System NAD 1983 (metric).

SITE CONTAMINATION AND CONTROL

Groundwater within the site boundary contains ethylbenzene, xylenes, PAHs (naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene), and TPH at groundwater cleanup target levels. The highest concentrations have been detected in groundwater from well MW-2, which is directly downgradient of the DFSA (Figure 2).

Soil in the area of the outfall of the former easternmost oil/water separator and west of the Spaceport USA parking area is contaminated with PAHs. Concentrations of benzo(a)pyrene exceed industrial soil cleanup target levels in a small area north of the drainage canal as the canal bends to the west (Figure 2). However, an alternative groundskeeper scenario was evaluated based on current and projected use of the site and yielded acceptable risk (5.1×10^{-7}).

Therefore, LUCs are required and will be implemented to prohibit residential use/exposure to groundwater and maintain the site use so that the groundskeeper scenario developed remains applicable to limit exposure to contaminated soils.

DECISION DOCUMENT

A Site Assessment Report dated September 2001 and subsequent decisions between NASA and FDEP established institutional controls as a component of the remedy for this site. The Site Assessment Report is available for review by contacting the KSC Environmental Program Office at telephone number (321) 867-8411.

IMPLEMENTATION

Institutional controls will be implemented by the KSC Environmental Program Office in accordance with a Land Use Control Assurance Plan included in a Memorandum of Agreement (MOA) between NASA, FDEP, and EPA, effective February 23, 2001. Property transfer (if conducted in the future) will be conducted in accordance with

Section X of the MOA[2].

KSC's Environmental Program Office will provide KSC's Master Planning Office with survey coordinates of the LUCs. Restrictions will specify limitations on development and reuse for the area for as long as LUCs are necessary to protect human health and the environment.

MONITORING

Quarterly inspections to monitor that institutional controls specified herein are in place and operating will be conducted by KSC's Environmental Program Office. The inspections will verify that no groundwater consumption is occurring, that the swales at the site continue to be used as swales to ensure that the groundskeeper scenario assumptions remain valid, and that no residential use is occurring.

REPORTING

KSC's Environmental Program Office will submit annual reports to EPA and FDEP certifying continued retention of the implemented LUCs.

ENFORCEMENT

KSC's Environmental Program Office will be responsible for stopping any activities at KSC that are not compliant with this LUCIP.

MAINTENANCE

This LUCIP will remain in place until a land use change is implemented and the concerns managed by the LUCIP are mitigated; or there is a discovery, based upon analytical evidence, that scenarios managed by the LUCIP are no longer a concern. Any change in LUC management must be approved by EPA and FDEP and implemented by modification of NASA's operating permit.

2. By separate MOA effective February 23, 2001, with the EPA and FDEP, KSC, on behalf of NASA, agreed to implement Center-wide, certain periodic site inspection, condition certification and agency notification procedures designed to ensure the maintenance by Center personnel of any site-specific LUCs deemed necessary for future protection of human health and the environment. A fundamental premise underlying execution of that agreement was that through the Center's substantial good faith compliance with the procedures called for herein, reasonable assurances would be provided to EPA and FDEP as to the permanency of those remedies which included the use of specific LUCs.

Although the terms and conditions of the MOA are not specifically incorporated or made enforceable herein by reference, it is understood and agreed by NASA KSC, EPA and FDEP that the contemplated permanence of the remedy reflected herein shall be dependent upon the Center's substantial good faith compliance with the specific LUC maintenance commitments reflected herein. Should such compliance not occur or should the MOA be terminated, it is understood that the protectiveness of the remedy concurred in may be reconsidered and that additional measures may need to be taken to adequately ensure necessary future protection of human health and the environment.

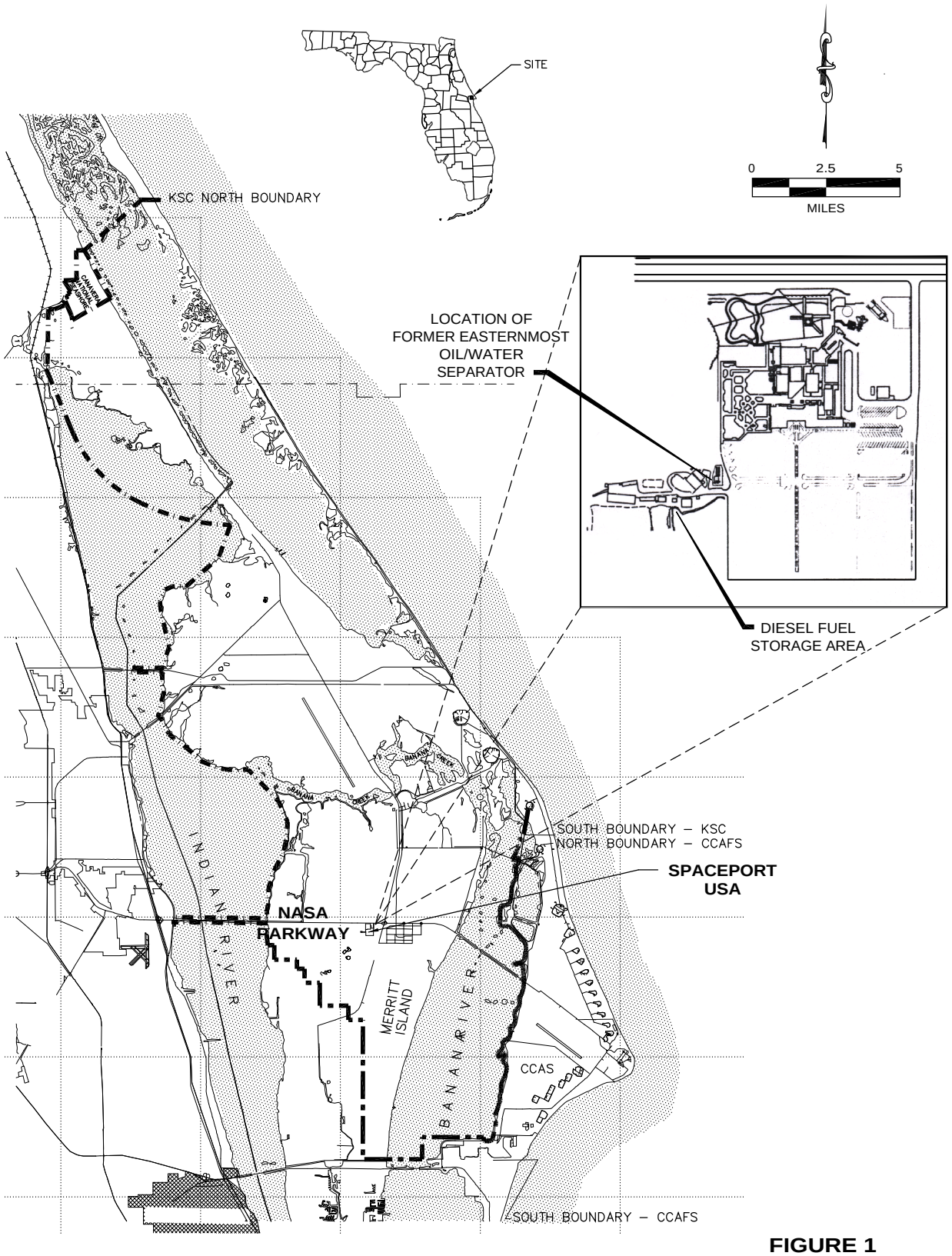

FIGURE 1
LOCATION OF THE KENNEDY SPACE CENTER AREA AND SPACEPORT USA

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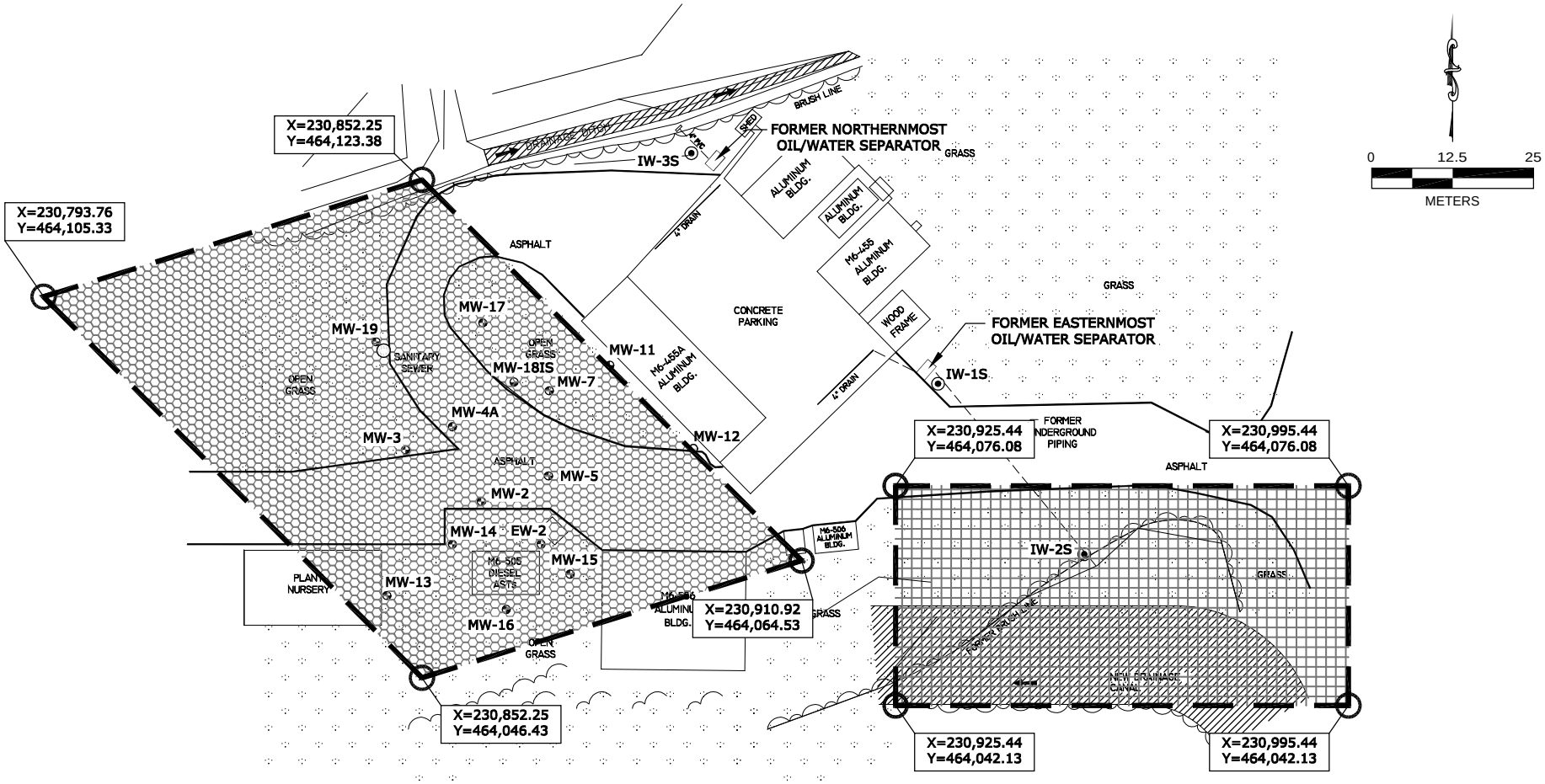

EXPLANATION

- SHALLOW MONITOR WELL LOCATION (14± FT)
- INTERMEDIATE-SHALLOW MONITOR WELL LOCATION (33 FT)
- SHALLOW INVESTIGATION WELL (12± FT)
- X AND Y COORDINATES ARE REFERENCED TO THE NORTH AMERICAN DATUM (NAD) OF 1983
- GROUNDWATER CONTROL AREA
- SOIL CONTROL AREA

FIGURE 2
CONTROL AREAS FOR THE DIESEL FUEL STORAGE AREA AND FORMER EASTERNMOST OIL/WATER SEPARATOR AREA

SPACEPORT USA
KENNEDY SPACE CENTER, FLORIDA

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